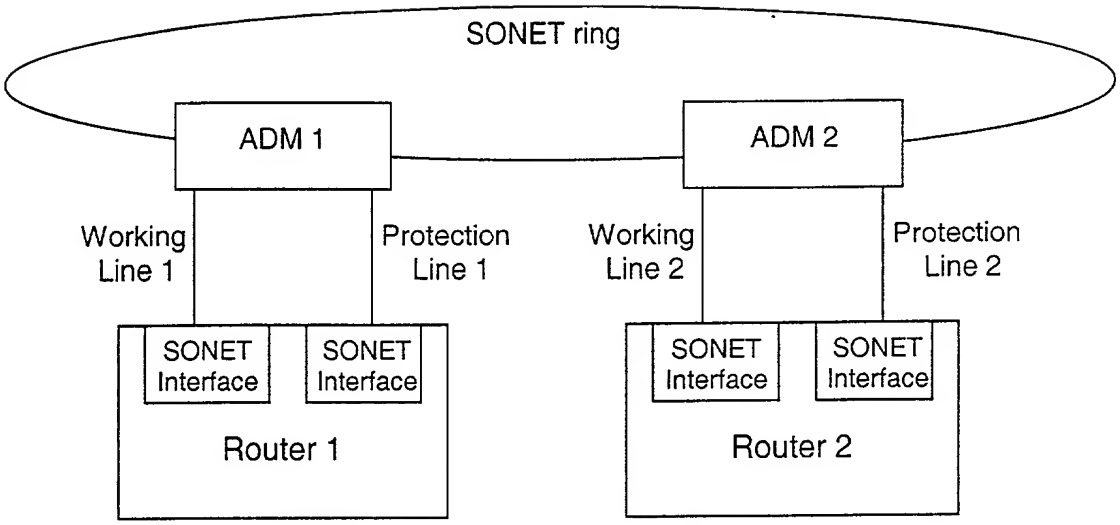

FIG. 1
(Prior Art)

Sprint Exhibit 2004

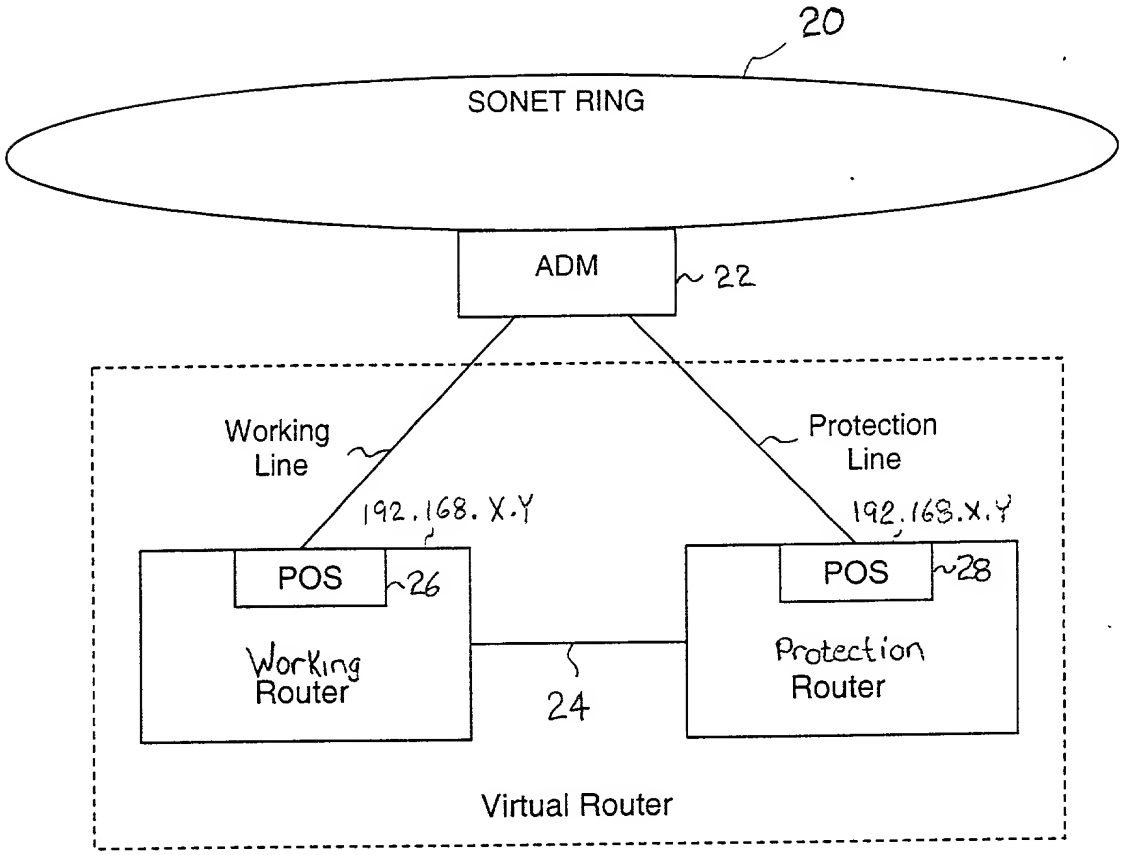
20
SONET RING
ADM
22
Working Line
Protection Line
192.168.X.Y
192.168.X.Y
POS
26
POS
28
Working Router
24
Protection Router
Virtual Router

FIG. 2

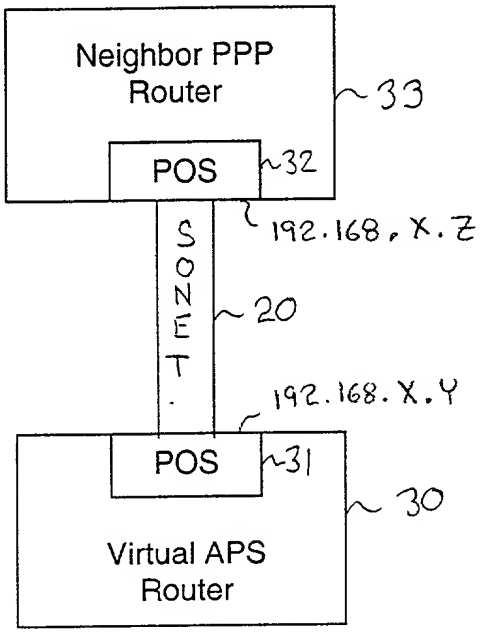
Neighbor PPP Router
33
POS
32
192.168.X.Z
SONET
20
192.168.X.Y
POS
31
30
Virtual APS Router

FIG. 3

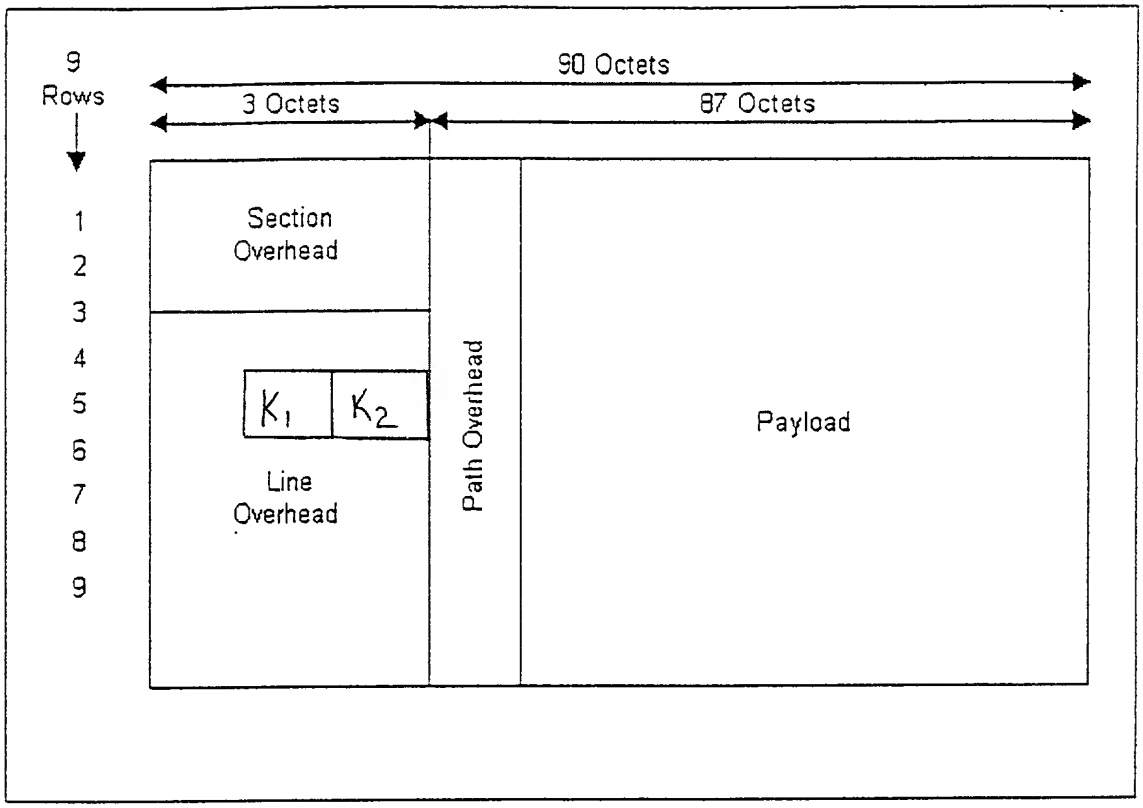

FIG. 4
(Prior Art)

Interframe Fill 0111 1110	Address 1 or 2 bytes	Control 1 or 2 bytes	Data 0 to X bytes	Checksum (FCS) 1 or 2 bytes	Interframe Fill 0111 1110

Basic HDLC frame format

Flag 0111 1110	Address 1111 1111	Control 0000 0011	Protocol ID 1 or 2 bytes	Information Variable/Pad	FCS 2 or 4 bytes	Flag 0111 1110

Basic PPP frame format

FIG. 5
(Prior Art)

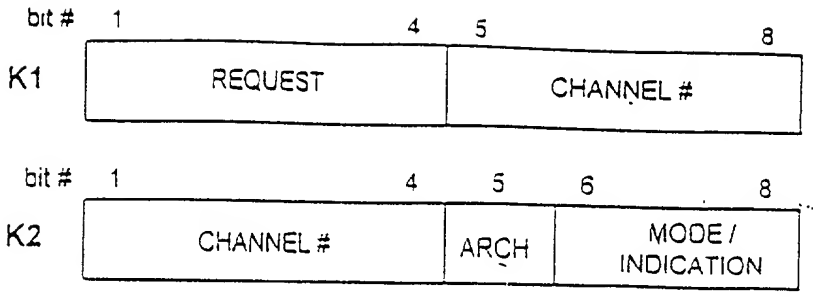

FIG. 6(a)
(Prior Art)

REQUEST

0000	No Request
0001	Do Not Revert (nonrevertive only)
0010	Reverse Request (bidirectional only)
0100	Exercise
0110	Wait-To-Restore (revertive only)
1000	Manual Switch
1010	Signal Degrade
1100	Signal Fail
1100	Forced Switch
1111	Lockout of Protection

FIG 6(b)
(Prior Art)

MODE / INDICATION

100	Provisioned for Unidirectional Switching Mode
101	Provisioned for Bidirectional Switching Mode
110	Line Remote Defect Indication (RDI-L)
111	Line Alarm Indication Signal (AIS-L)

FIG. 6(c)
(Prior Art)

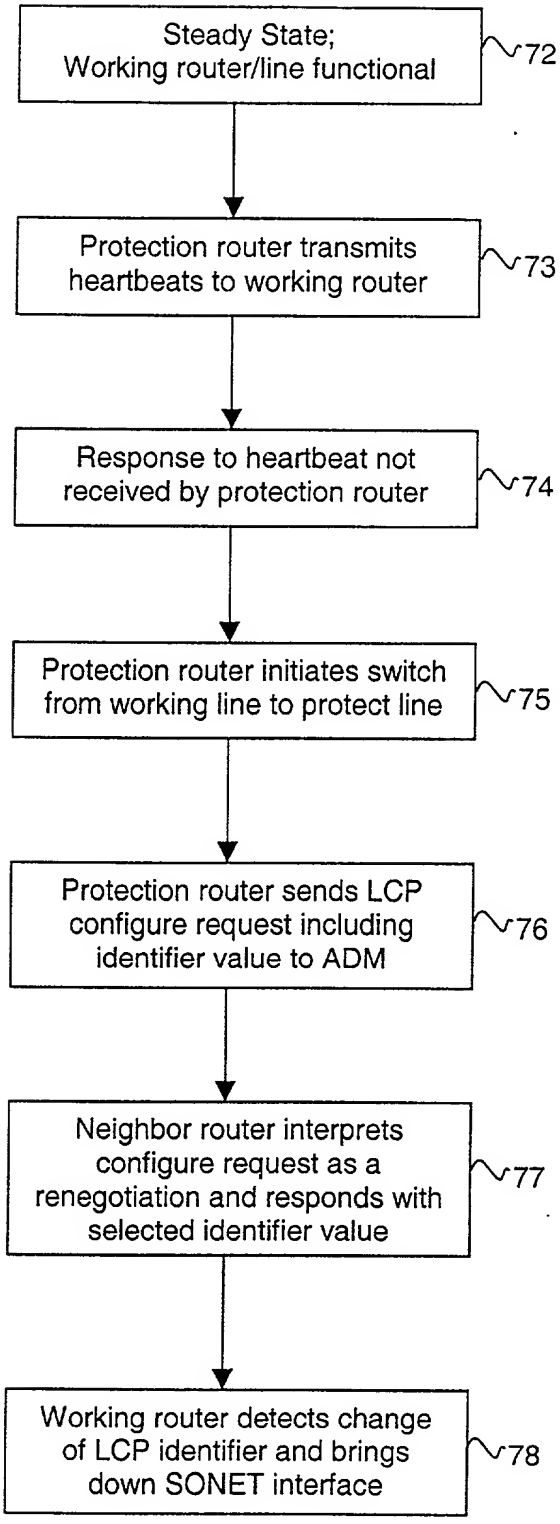
Steady State;
Working router/line functional
72
Protection router transmits heartbeats to working router
73
Response to heartbeat not received by protection router
74
Protection router initiates switch from working line to protect line
75
Protection router sends LCP configure request including identifier value to ADM
76
Neighbor router interprets configure request as a renegotiation and responds with selected identifier value
77
Working router detects change of LCP identifier and brings down SONET interface
78

FIG. 7